REMARKS

Claims 1-20 are active in the application.

Claim 2 has been amended to correct a grammatical error.

Claims 1 and 11 have been amended to specify that no data communication exists between the rental cars and the management system or reservation server. This added limitation is supported by page 2, lines 16-17, and has been included to simplify the issues in this case and to place the application in *prima facie* condition for allowance. Also, this limitation is supported at page 6, line 21 through page 7, line 7, which describe the operation of the present system as not requiring any data communication between the rental cars and the management system/reservation server. Fig. 4 also shows that the present system does not require data communication between the rental cars and the management system/reservation server.

Claim 20 has been added. Claim 20 is supported by the specification at page 7, lines 17-19 and lines 5-7. Claim 20 is dependent on claim 1, which, as will be discussed below is in condition for allowance. As such, claim 20 should be allowable for at least the same reasons, and does not present a significant new issue.

In the most recent response, the Examiner argues that *Whipp et al.* teaches that each car has a means to invalidate a digital key (response to argument #1 on page 10, section B). This is a change from the original Office Action, which argued that *Murakami et al.* taught that each car has a means to invalidate a digital key (col. 6, lines 29-67 to col. 7 line 63). The grounds for rejection have therefore been changed in the absence of any change to the claims, and so the finality of the rejection appears premature. In addition to the amendments clarifying the issues for consideration, it is respectfully requested that the new amendments be considered on the grounds that the reasoning presented in the office action has changed.

Claims 1-19 were rejected as being unpatentable over US patent 6,253,980 to Murakami et al. in view of US patent application 2002/0022979 to Whipp et al. The rejections are traversed by amendments to claims 1 and 11.

Neither Murakami et al. nor Whipp et al. meet the new limitations set forth in amended claims 1 and 11 that require no data communication between the rental car and

the central station or management system. Both Murakami et al. and Whipp et al. teach that it is essential to have a data link between the rental cars and the central station. The data link is provided so that the central station can provide ID authentication at the rental car. For example, see col. 12, lines 23-67 of Murakami et al. and Fig. 1, 0026, 0061 of Whipp et al. Murakami et al. and Whipp et al. do not teach any way to provide authentication without such a data link. A data link is essential in both Murakami et al. and Whipp et al. Hence, no conceivable combination of Murakami et al. and Whipp et al. could produce the present invention as claimed.

Contrary to the Office Action, paragraphs 62-66 of Whipp et al. do not teach or suggest a means to invalidate a digital key. A digital key inherently contains code indicating its authenticity by means of a public-private key system, and so can be used to access the car without the car needing to authenticate the key with the central station. The means to invalidate a digital key of the present invention changes the digital code of the digital key so that it no longer can provide access to the rental car. This is explained on page 7, lines 13-17 of the application. Also, the means to invalidate the digital key does so by making a record of the digital key in a storage device (see page 7, lines 5-7 and lines 17-19). Significantly, the means to invalidate the digital key is located within the rental car, so that the car can invalidate the key without requiring communication with the management system or reservation server.

Paragraphs 62-66 of Whipp et al. does not disclose anything related to invalidating a digital key. Also, the passage quoted by the Examiner ("Once the information is entered...") has nothing to do with invalidating a digital key according to the present invention. This passage of Whipp et al. describes how a rental car can be temporarily secured by a password while a user is gone. Specifically, lines 9-10 of PP 62, states "At times the user will wish to temporarily leave a vehicle 12 and lock it, without giving up the lease." Whipp et al. then describes how the car can be password-protected while the renter is away. There is no teaching or suggestion in this section or anywhere else that a car can change a digital key so that it becomes invalidated, or store a record of a digital key.

In regards to arguments 2, 3 and 4 listed in the Office Action, the Examiner has not provided any reasoning for applying the stated arguments relating to obviousness.

The fact remains that neither Murakami et al. nor Whipp et al. teach or suggest the use of a digital key (which is necessarily the product of a public/private key system). The Examiner has not demonstrated otherwise. Also, Murakami et al. does not teach or suggest a digital key signed by a management system. Also, Whipp et al. does not teach or suggest a digital signature for use in a digital key. Murakami et al. and Whipp et al. tend to teach away from these features because they both rely on a data link to the central station for ID authentication.

It is again noted that neither Murakami et al nor Whipp et al. teach or suggest the use of a digital key. A "digital key" in the invention is signed by the car rental system (using a private key of a private/public key pair) for authenticity. The digital signature in the digital key allows the rental car to verify the authenticity of the digital key without communicating to the central station. This feature of the present invention is a substantial improvement over other systems (e.g. Murakami et al. and Whipp et al.) that require communication with the central station or reservation server. Communication with the central station is required in prior art systems because they do not use a digital key having a signature.

The "user ID information" or "customers data" taught by Murakami et al or Whipp et al. are not "digital keys" as taught and required by the present invention. The "digital key" of the present invention necessarily includes a digital signature (produced by a public-private key system) of the car rental system so it can be authenticated without communication to the central station. The digital signature is necessarily made using a private key of the central station. By comparison, neither Murakami et al. nor Whipp et al. teach a key that has such authentication capability. Murakami et al. and Whipp et al. *both teach that it is essential to provide a data link to the central station.* For example. See PP 50, lines 1-11 of Whipp et al. which state: "...communications are established between a vehicle 12 and automated, centralized data management system...". Also, see col. 11, lines 28-35 and col. 12, lines 36-67 of Murakami et al. In both Murakami et al. and Whipp et al. authentication of the user ID or data is *performed by the central station over the data link.* Hence, neither Murakami et al. or Whipp et al. employ a digital key as defined and described in the present specification.

With respect to claim 11, the prior arguments are reiterated. The Office Action erroneously asserts that Whipp et al. teach in paragraphs 0050-0056 the step of "creating a digital key...with a digital signature of the reservation server" and the step of "downloading the digital key to a portable storage device...". However, paragraphs 0050-0056 don't describe any sort of digital key or car access system. Wholly absent from Whipp et al. entirely and specifically from paragraphs 0050-0056 is any teaching or suggestion to create a digital key or to use a digital key with a digital signature. Instead of a digital key, Whipp et al. teach the use of a data link between the car and the central computer for authorization (see paragraphs 0061, 0072 and 0073). Whipp et al. in paragraph 0063 describes an electronic "pass key", but this pass key is not a digital key, is not "created by the reservation server", and does not have a "digital signature of the reservation server". Whipp et al. therefore fail to meet the limitations of original claim 11 and therefore the rejection of claims 11-19 must be withdrawn for this additional reason.

The rejections of claims 8, 9, and 10 are again traversed by the same arguments as before. The Examiners rejections of these claims are again completely erroneous.

Regarding claim 8, Murakami et al. does not teach a digital key comprising car ID and user ID signed by a management system. Murakami et al. teach that only the user ID and PIN are used to provide the client with access to the car (see col. 11, lines 24-67).

Regarding claim 9, Murakami et al. does not teach or suggest invalidation of a digital key. Murakami et al teach the use of a user ID, not a digital key. Also, Murakami et al. does not teach that the client returns an invalidated digital key. Murakami et al. instead teach that the central computer invalidates the clients ID.

Regarding claim 10, Murakami et al does not teach or suggest that a digital key can store car status information. Col. 8 lines 24-64 (identified by the Examiner) instead teach that state of charge (SOC) or other state information can be sent to the central computer through the data link. Also, this section of Murakami et al. teach a selection process for matching cars with clients based on the SOC.

Regarding claim 15, the prior arguments are reiterated. Whipp et al does not in any way teach or suggest computing the hash of a car renters PIN, combining the hashed PIN with car and renter ID, and digitally signing the result. Whipp et al. in fact does not teach *any* of these steps. The paragraphs identified in the Office Action have nothing to

do with the limitations of claim 15. Murakami et al. also do not teach the steps of claim 15. Therefore, the rejection of claim 15 is in error.

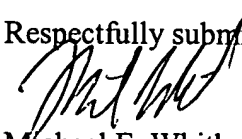
The rejections of claims 16, 17 and 18 are also erroneous for the same reasons argued in the prior response. Specifically, regarding claim 16, neither Murakami et al. or Whipp et al. teach that the car can check the validity of a digital key. Regarding claim 17, neither Murakami et al nor Whipp et al. teach the step of the access controller in the car invalidating the digital key or generating a return packet and appending the return packet to the digital key. Regarding claim 18, neither Murakami et al. nor Whipp et al. teach the step of verifying the signature on the return packet.

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-20 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees for the petition or for entry of this amendment to Attorney's Deposit Account No. 50-0510 (IBM Yorktown).

Respectfully submitted,



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